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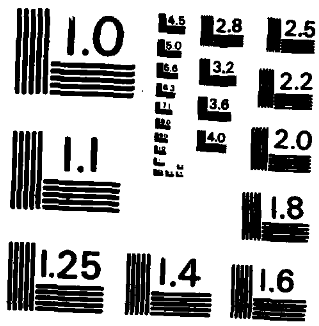

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Information Mapping, Inc.
First in Information Organization

June 30, 1983

Project No. 162

HOW TO EVALUATE TRAINING

Prepared for

U.S. Army
Training Developments Institute
and
Battelle

By

Information Mapping, Inc.

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This paper was based on the ARI-produced evaluation job aids for the M-1 Training Effectiveness Analysis, written by Mr. Donald Kristianson and Mr. Bobby Witmer, ARI, Ft Knox, KY 40121. The paper assists an individual with how to: a. evaluate a training program b. observe training c. collect data d. analyze test score data e. develop questionnaires.

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FINAL REPORT — TABLE OF CONTENTS

Overview 1

The Information Mapping Approach 2

Project Scope 3

Brief History of Information Mapping, Inc 4

Features of The Information Mapping Method 5

Before -- Original 8

After -- How to Complete Worksheet Headings 10

Before -- Original 12

After -- Worksheet 1. Training Plan 15

After -- Worksheet 1--Training Plan--Part 1. Equipment and Materials 16

Advantages of The Information Mapping Method 18

Task Analysis and Our Method of Writing 22

Savings achieved by Using Our Writing Method 23

Summary of Recent Research 24

The Information Mapping® Writing Service 27

Information Mapping® Seminars 28

Appendix A -- Overview of Sample Typeset Pages A-1

Question 4: Are Standards Listed in the Training Objective? A-2

Question 5: Are the Standards Clearly Spelled Out? A-2

Question 7: Is the Required Information Taught Through a Lecture or Hand-Out? A-3

Question 8: Is the Task Completely Demonstrated? A-3

Question 15: Are the Items to be Tested Taken Directly from the Training Objective? A-4

Question 16: Are All Critical or Difficult Tasks or Subtasks Tested? A-4

Question 17: Are the Conditions the Same for Training and Testing? A-5

Question 18: Are the Standards the Same for the Test? A-5

Question 19: Re-Scoring Instructions Specific Enough? A-6

Continued on next page

FINAL REPORT — TABLE OF CONTENTS, Continued

Appendix B -- Overview of Delta Force Paper.............................. B-1

Information and Decision Management Through Structured Writing -- Table of Contents... B-2

Delta Force -- Concept Paper -- Abstract................................. B-3

Information and Decision Management Through Structured Writing.......... B-4

Typical Document... B-10

Same Document -- The Structured Writing Version......................... B-11

Typical Document... B-12

Same Document -- The Structured Writing Version......................... B-13

Typical Personnel Manual... B-14

Same Document -- The Structured Writing Version......................... B-15

Typical Personnel Manual... B-16

Same Document -- The Structured Writing Version......................... B-17

Typical Personnel Manual... B-18

Same Document -- The Structured Writing Version......................... B-19

Typical Personnel Manual... B-20

Same Document -- The Structured Writing Version......................... B-21

Typical Personnel Manual... B-22

Same Document -- The Structured Writing Version......................... B-23

Appencix C -- Overview Of Army Regulations Done By Information Mapping... C-1

Examples Of Army Regulations Done By Information Mapping................. C-2

OVERVIEW

Introduction

This final report is part of the scope of work undertaken by Information Mapping, Inc. for the U.S. Army, Training Developments Institute.

It contains the following information:

- summary of the scope of the work performed
- identification of the blocks to effective comprehension in the field evaluation aids
- suggestions for an improved model of rules and procedures for effective literature constructions
- demonstration of the application of those rules and procedures on the field evaluation aids
- conclusions and final recommendations.

Disclaimer

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision unless so designated by other documentation.

Acknowledgements

We would like to acknowledge the Scientific Services Program of Battelle and the U.S. Army, Training Developments Institute for their financial support of the work done on the field evaluation materials and aids.

Notice

THE INFORMATION MAPPING APPROACH

Introduction	Our approach to the task of analyzing and revising the U.S. Army's Training Program Evaluation manual has been unique. As this report will show, we believe that the problems of usability and comprehensiblity with military literature need to be attacked from a completely different angle.
The problem is not the reader	Instead of focusing on the specific user, we focused instead, as we do with all our work, on the conventional method of writing. Our belief is that the problem is not with the reader or writer, but with the way that information itself is presented.
Conventional writing is the problem	In print, this presentation of information takes the form of conventional writing. It is based on an ancient oral tradition of rhetoric that is more than 2,000 years old. Conventional writing, as this report will demonstrate, is the real root of the problem.
Information Mapping is a solution	The Information Mapping method is a new form of writing developed for today's needs. This report will demonstrate the application of this method as a solution to the problems the military has experienced with the comprehensibility and usability of military literature.
The project as a demonstration	Information Mapping has used the U.S. Army's Training Program Evaluation Manual as the basis for our demonstration. The manual, which was completely revised according to our method, follows this report.
Conclusion	Based on our experience with this project and other projects we have done for the Army, our conclusion is that the Informaion Mapping method is the most effective way of organizing and presenting military literature. The problem has been caused by the difficulties inherent in conventional writing. These difficulties with readability and usability (access, scanning, graphics) are overcome by the Information Mapping method.
Recommendation	Our recommendation is that the military adopt the Information Mapping method as the standard for organizing and presenting military literature.

PROJECT SCOPE

Background	There are significant ongoing problems with the • comprehensibility and • useability of military literature. Specifically with field evaluation documents, the target audience is unable to use the material • due to mechanical difficulties and • because the current RGL methodologies are totally inadequate for measuring or predicting comprehension.
Purpose	The stated purpose of this project is to • define specific problems with the source material (The Training Program Evaluation), and • demonstrate potential solutions.
Tasks	IMI conducted the following tasks: • identified the blocks to effective reading comprehension in the field evaluation aids • suggested an improved model of rules and procedures for effective literature construction • demonstrated the application of those rules and procedures on the field evaluation aids of the Training Program Evaluation.
Objective	Our objective is to define and demonstrate an approach to increasing the comprehensibility and usability of military literature in general and the Training Program Evaluation in pratciular.
Goal	The research and demonstration must be applicable to evaluation literature in specific and Army-wide literature in general.

BRIEF HISTORY OF INFORMATION MAPPING, INC.

Early history	Information Mapping, Inc. was incorporated in 1967 to do research and development in the field of programmed instruction and information simplification. The Information Mapping® writing service grew out of this research. The U.S. Air Force Systems Command sponsored early evaluation work on the techniques. These contracts focused on its use in computer-based instructional systems of the late 1970's and early 1980's.
The Information Mapping writing service	The Information Mapping writing service has proved itself to be an invaluable tool for information simplification and clear communication. Current applications include: • training • methods and procedures • reference documents • reports and memos • computer user manuals. Through its Information Mapping writing service, IMI is now involved in full scale projects aiding companies and governments around the world to use our method of writing.

FEATURES OF THE INFORMATION MAPPING METHOD

Background	In previous approaches to written communication, the basic units of analysis and writing have been the sentence and the paragraph. Our research proved the paragraph is simply too ill-defined to provide a useful way of organizing complex technical, procedural and administrative information. IMI devised new units to replace the paragraph. The sentence is so basic that no change was made.
Principle	The basic units of writing create a document's structure. The new basic writing units are the Block, which replaces the paragraph, and aggregations of Blocks, called Maps.
Definitions	Block. A Block consists of: • one or more sentences (and/or diagrams) about a logically coherent fragment of subject matter, and • a label in the left margin that describes the contents of the Block, e.g., "Definition," "Example," etc. Map. A Map is a collection of all relevant Blocks about a limited topic. A Block is always part of a Map. Blocks are easy to identify on already written Maps because they are usually separated by horizontal lines and have labels prominently displayed in the margin (or at an otherwise graphically prominent place).
Types of Blocks	We have identified over 200 types of Blocks. Some are used only in particular kinds of documents. Others can be used in almost any document. Just which Blocks belong in a given Map depends on • the document's purpose • the nature of the subject matter or job, and • the background and needs of the readers.

Continued on next page

Types of Maps	The following types of Maps are used in developing field evaluation aids and instructional materials: • <u>Structure Maps</u>--describe physical things, objects with identifiable boundaries • <u>Procedure Maps</u>--explain how to do things, and in what order to do them • <u>Process Maps</u>--explain how processes or operations work; how changes take place in time • <u>Classification Maps</u>--show how sets of concepts are organized • <u>Concept Maps</u>--define and give examples and non-examples of new aspects of the subject matter • <u>Fact Maps</u>--give results of observations or measurements without supporting evidence • <u>Principal Maps</u>--explain important generalizations, policies and rules • <u>Overview Maps</u>--organize in advance the material for units and chapters; added specifically to aid learning • <u>Review Maps</u>--summarize units or sections of courses • <u>Combination Maps</u>--combine the key Blocks of two or more basic Map types on the same Map.
Consistent format	A consistent format is used for each kind of information. In each document, the arrangement of Blocks is determined by the Block's content and purpose.
Categorization of subject matter	A highly structured classification system is used to categorize subject matter into Maps and Blocks of different types. A writer using IMI's method considers the requirements for successful learning and reference when determining the relationship among different information segments.

Continued on next page

FEATURES OF THE INFORMATION MAPPING METHOD, Continued

Hierarchy of information

Most structured writing documents are hierarchically organized into

- courses (or manuals)
- units (sections, chapters, modules)
- Maps, and
- Blocks.

Components of our method

Our approach is not based on one simple concept, but is an integrated set of methods, principles, ideas and standards. It is composed of the following elements:

- An easily learned set of writing standards, which provide flexibility, modularity and retrievability of information, while improving the effectiveness and efficiency of communication.

- A new and precise basic unit of organization, the Information Block, which replaces the paragraph.

- An efficient system for subject matter analysis that enables the writer and reader to organize information so that the results are clear, concise and consistent.

- A set of fast outlining procedures which permit easy organization of your document. These procedures provide at least half of the outline immediately and simplify preparation of the other half.

- Ready-made formats for presenting information in different display media from typewritten pages to printed books. These formats allow readers to easily scan large amounts of information and quickly locate parts relevant to them.

Sources

Our method draws from many sources, yet is innovative. Not all of it is new. Care has been taken to include many good communication devices and to keep the modular system flexible enough to incorporate new information inventions.

Proven concepts and techniques have been borrowed from many fields: learning research, advertising, technical writing, data processing, etc. The result is a careful, comprehensive synthesis of familiar elements combined with many novel twists that give the method a unique character.

Examples

The purpose of the following "Before and After" pages is to compare pages from the original Training Program Evaluation with those same pages in our Information Mapping method.

BEFORE

Some of the items on the worksheets may not apply to the particular lesson or class being observed. If this is the case, you should mark the column labeled "NA" for those items. For example, one item asks if job aids were given to the soldiers at the beginning of training. If job aids do not exist for the tasks being taught, then the question about job aids is not applicable to the lesson and should be marked "NA."

You, as the training observer, may not have enough information to answer every item appearing on the worksheets. If you do not know the answer to an item, write "UNKNOWN" opposite the item in the column labeled "COMMENTS."

Upon completing each worksheet, or as soon as possible thereafter, you should check the worksheet for completeness and accuracy. Following the class when all worksheets have been completed and checked, you should return the worksheets to the training analyst.

The remainder of this job aid provides the detailed guidance you will need to complete the training observation worksheets. One section describes how to complete the headings that are found at the beginning of each worksheet. Then each of the worksheets is described in detail. A separate section for each worksheet describes the worksheet, explains how it is used in training observation, and lists and defines the items appearing on the worksheet.

Instructions for Completing Headings

The items on each worksheet are preceded by a heading. In the headings you will identify the class being observed by name and record when and where the training occurred and who was present. All information called for in the headings is listed in the composite heading below. Instructions for completing each item in the headings are also given. Generally, you should complete the headings before the class (or test) begins.

(Composite Heading)

Class/Lesson Title ______	Date ______
Training/Testing Site ______	Training Observer ______
Number of Soldiers ______	Instructor ______
Number of Instructors/AIs ______	Examiner ______
Class/Test Started (Time) ______	Test/Retest ______
Class/Test Ended (Time) ______	

Class/Lesson Title - Record the name of the class or lesson that you are observing.

Training/Testing Site - Record the name (e.g., Richardson Tank Motor Park, 103 Harris Hall) and type (e.g., motor pool, classroom) of the place where the training or test is being conducted.

Number of Soldiers - Record how many of the soldiers being trained were present for class.

Number of Instructors/AIs - Record the number of persons present who served as instructors. Include both Primary and Assistant Instructors (AIs) in your count.

Class/Test Started (Time) - Record the exact time that the instruction or test actually began.

BEFORE

Class/Test Ended (Time) - Record the time that the class or test actually ended.

Date - Record the day, month and year on which the training was conducted.

Training Observer - Write your name or ID number to identify you as the person who is observing training and completing the worksheets.

Instructor - Identify the person(s) presenting the instruction by name or by ID number.

Examiner - Record the name or ID number of the person who conducts and perhaps scores the test.

Test/Retest - If the soldier is being tested for the first time on the task, circle "Test." If the soldier received a NO GO on his first attempt and is being tested again, circle "Retest."

Worksheet 1, Training Plan

For each class that you observe, you will be given a worksheet that outlines the training planned for that class. This worksheet has three parts, and is used to determine whether the instructor followed the lesson plan in conducting the class. (Refer to Appendix A for a sample of a Training Plan Worksheet similar to one you might use in observing training.)

Description (Part I, Equipment and Materials). Part I of the Training Plan Worksheet includes the following information:

- The training aids, training equipment, and training materials that should be used during this lesson. (Training aids are any equipment or materials used by the instructor for the purpose of making the training process easier or more effective. Examples of training aids include slides, films, projectors, audio and video equipment, charts, magnetic boards, chalkboards, models, mock-ups and sandtables. Training equipment consists of any equipment used by the soldiers during the course of training. Examples of training equipment include weapon systems, tools, test equipment, and simulators. Training materials consist of all printed materials (other than job aids) provided to the soldiers for their use during training. Training materials include such things as technical manuals, workbooks, and handouts.)[1]

- Job aids that are given to soldiers and used during training. (Job aids are step-by-step directions to be used in the actual performance of the tasks on the job. Job aids tell the soldier when-to-perform and how-to-perform.)

- Requirements that the training site should meet to include preparation of the site for training.

---

[1]For the purposes of this job aid, the term "training aid" is reserved for equipment used by the instructor. All equipment used by the soldiers is referred to as training equipment.

AFTER

HOW TO COMPLETE WORKSHEET HEADINGS

Background

You will fill out a heading for each worksheet that you use.

The heading identifies

- the name of the class
- when and where the training occurred and
- who was present.

When to complete

You may find it helpful to complete some of the items in the heading before the class or test begins.

However, you must record items when you observe them or when they occur. Remember, record what actually happens, not what is supposed to happen.

Sample heading

SAMPLE HEADING

Class/Lesson Title ___①___	Date ___⑦___
Training/Testing Site ___②___	Training Observer ___⑧___
______	Instructor ___⑨___
Number of Soldiers ___③___	Examiner ___⑩___
Number of Instructors/AIs ___④___	Test/Retest ___⑪___
Class/Test Started (Time) ___⑤___	
Class/Test Ended (Time) ___⑥___	

Note: This is a sample heading. Not all of this information is in every heading.

Continued on next page

AFTER

HOW TO COMPLETE WORKSHEET HEADINGS, Continued

How to complete

NUMBER	RECORD...
1	the name of the class or lesson you are observing.
2	the name of the place <u>and</u> the type of place where the training or test is given. <u>Example</u>: Richardson Tank Motor Park, 103 Harris Hall--classroom
3	the number of soldiers actually present for instruction or testing.
4	the number of instructors present. Include Primary Instructors <u>and</u> Assistant Instructors (AIs).
5	the exact time the instruction or test <u>actually</u> began.
6	the exact time the class <u>actually</u> ended.
7	the day, month and year.
8	your name or ID number.
9	the name(s) or ID number(s) of the person who presents the instruction.
10	the name(s) or ID number(s) of the person who conducts and perhaps scores the test.
11	see table below

IF the soldier...	THEN circle...
is being tested for the first time on the task	Test
got a NO GO on the first attempt and is being tested again	Retest

BEFORE

Class/Test Ended (Time) - Record the time that the class or test actually ended.

Date - Record the day, month and year on which the training was conducted.

Training Observer - Write your name or ID number to identify you as the person who is observing training and completing the worksheets.

Instructor - Identify the person(s) presenting the instruction by name or by ID number.

Examiner - Record the name or ID number of the person who conducts and perhaps scores the test.

Test/Retest - If the soldier is being tested for the first time on the task, circle "Test." If the soldier received a NO GO on his first attempt and is being tested again, circle "Retest."

Worksheet 1, Training Plan

For each class that you observe, you will be given a worksheet that outlines the training planned for that class. This worksheet has three parts, and is used to determine whether the instructor followed the lesson plan in conducting the class. (Refer to Appendix A for a sample of a Training Plan Worksheet similar to one you might use in observing training.)

Description (Part I, Equipment and Materials). Part I of the Training Plan Worksheet includes the following information:

- The training aids, training equipment, and training materials that shou. be used during this lesson. (Training aids are any equipment or materials used by the instructor for the purpose of making the training process easier or more effective. Examples of training aids include slides, films, projectors, audio and video equipment, charts, magnetic boards, chalkboards, models, mock-ups and sandtables. Training equipment consists of any equipment used by the soldiers during the course of training. Examples of training equipment include weapon systems, tools, test equipment, and simulators. Training materials consist of all printed materials (other than job aids) provided to the soldiers for their use during training. Training materials include such things as technical manuals, workbooks, and handouts.)[1]

- Job aids that are given to soldiers and used during training. (Job aids are step-by-step directions to be used in the actual performance of the tasks on the job. Job aids tell the soldier when-to-perform and how-to-perform.)

- Requirements that the training site should meet to include preparation of the site for training.

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[1]For the purposes of this job aid, the term "training aid" is reserved for equipment used by the instructor. All equipment used by the soldiers is referred to as training equipment.

BEFORE

. A listing of safety precautions that should be emphasized and followed during the training.

How Used (Part I, Equipment and Materials). By comparing the information listed in Part I with what you see during training, you can determine if the specified equipment, materials, and job aids were used, if soldiers were told the safety precautions they must take, and if the training site was set up correctly. Although Part I is not a checklist, you should "check off" equipment, materials, aids, and safety precautions as they are introduced during the lesson. If you see safety violations or if the training site does not conform to that described on the worksheet, you should make a note of this in the margin or on the back of the worksheet.

Description (Part II, Training Objectives). Part II of the Training Plan Worksheet lists the training objectives for this lesson by task and subtask number. Each training objective listed in Part II will include a task statement, a conditions statement, and the standards for a GO. The task statement describes the things that the soldier is expected to do after training. The conditions statement tells what will be given to the soldiers in performing the task and the conditions under which the task must be performed. The standards specify how well the soldiers must perform the task in terms of time and accuracy.

How Used (Part II, Training Objectives). Part II is used as the main source for information about the training objectives. Whenever an observation requires that you know the tasks/subtasks, conditions, or standards associated with a particular training objective, Part II of the Training Plan Worksheet provides a ready source of this information.

Description (Part III, Training Events). Part III of the Training Plan Worksheet lists the training events planned for the lesson. A training event consists of training activities grouped together to serve a common purpose in teaching a task or subtask. Training events are listed on this worksheet by task (or subtask) number and by event type. Event type identifies the class of training activities to be conducted (e.g., demonstration, practice, or test). The training activities themselves are listed in the column of the worksheet labeled "Events."

How Used (Part III, Training Events). Using Part III of the Training Plan Worksheet; you can determine whether the training events were conducted as planned. For each training event listed in the "Events" column, you should indicate whether the event did or did not occur by checking "YES" or "NO." In order to be able to say whether or not the event occurred, you need only the description of the event from the "Events" column and the type of event from the "Events Type" column. The five event types that you will encounter in completing the worksheet are listed and defined below.

. OBJECTIVES/PURPOSE (OBJ) - Objectives are stated to include tasks, conditions and standards, and the purpose of the training is explained.

. TERMINOLOGY (TERM) - New terms are identified and unfamiliar concepts are explained.

BEFORE

WORKSHEET 1, TRAINING PLAN - PART I, EQUIPMENT AND MATERIALS

Class/Lesson Title Operator Maintenance on Cal. 50 M2 HB Machinegun

Training Observer (Your Name)

1. List under the appropriate heading below the training aids, equipment, and materials that will be used during this lesson.

Training Equipment	Training Materials	Training Aids
One .50 Cal. Machinegun per student	TM 9-1005-213-10	
Headspace & Timing Gauge	Handout, "Machinegun M2,	
Five-round belt of dummy ammunition	Cal .50 HB"	

2. List any job aids that will be provided to soldiers and used during this training.

   None.

3. From the lesson plan, briefly describe the characteristics required of the training site. Include how the site should be prepared for training.

Training site should be a large classroom with tables for assembly/disassembly. Each Cal .50 M2 HB machinegun should be checked by AI before class to ensure it is operational. Machineguns and all associated equipment to include headspace and timing gauge, dummy ammunition and .50 cal link should be present.

4. List safety precautions that should be emphasized and followed during this training.

   (a) Ensure weapon is clear before starting disassembly.

   (b) Before removing backplate, ensure that recoiling parts are forward to prevent injury.

   (c) If headspace is set improperly or timing is early, the round may fire before fully seating in the chamber causing damage to parts or injury to personnel.

(Attach additional pages as necessary)

AFTER

WORKSHEET 1. TRAINING PLAN

Introduction	For each class you observe, the Training Evaluator will give you a worksheet that outlines the training planned for that class.
Purpose	Use this worksheet to find out whether the instructor followed the lesson plan.
Description	The Training Plan Worksheet has 3 parts: • Part 1: Equipment and Materials • Part 2: Training Objectives • Part 3: Training Events.
On the following pages	On the next 2 pages, we discuss the parts of the Training Plan Worksheet and give an example of each part.

WORKSHEET 1—TRAINING PLAN—PART 1. EQUIPMENT AND MATERIALS

Description	Part 1 of the Training Plan Worksheet lists the • equipment and materials that should be used during training • job aids that should be given to the soldiers and used during training • requirements for the training site, including site preparation • safety precautions the instructor should emphasize during training.
Example	The example on the opposite page shows Part 1 of a Training Plan worksheet for a lesson in operator maintenance of the Cal. 50 machinegun. This is what the worksheet looks like when the Training Evaluator gives it to you.
How to complete Part 1	Follow these guidelines to complete Part 1. 1. Check off equipment, materials, aids and safety precautions as they are introduced during the lesson. 2. Make notes about safety violations or problems with the training site in the margins or on the back of the worksheet.

Continued on next page

AFTER

WORKSHEET 1. TRAINING PLAN—PART 1. EQUIPMENT AND MATERIALS, Continued

WORKSHEET 1, TRAINING PLAN - PART I, EQUIPMENT AND MATERIALS

Class/Lesson Title Operator Maintenance on Cal. 50 M2 HB Machinegun

Training Observer (Your Name)

Training equipment, materials, aids needed	**Training Equipment** • One .50 Cal Machinegun per student • Headspace and Timing Gauge • Five-round belt of dummy ammunition	**Training Materials** • TM 9-1005-213-10 • Handout, "Machinegun M2 Cal. .50 HB"	**Training Aids** • none	
Job aids provided	NONE			
Training site require-ments	Description: Training site should be a large classroom with tables for assembly/disassembly. Preparation: Each Cal .50 M2 HB machinegun should be checked by AI before class to ensure it is operational. Machineguns and all associated equipment to include headspace and timing gauge, dummy ammunition and .50 cal link should be present.			
Safety precau-tions needed	• Ensure weapon is clear before starting disassembly. • Before removing backplate, ensure that recoiling parts are forward to prevent injury. • If headspace is set improperly or timing is early, the round may fire before fully seating in the chamber causing damage to parts or injury to personnel.			

ADVANTAGES OF THE INFORMATION MAPPING METHOD

Benefits of our method

IMI's writing method is designed to

- increase comprehension
- reduce user errors
- facilitate access to information
- improve readability
- reduce reading time
- facilitate updating and revisions.

Research findings and client evaluations substantiate these benefits. How our method achieves these benefits in training development projects is described below.

Better training

The structure of information is represented graphically--the principle and subordinate, or supplementary information are always clearly distinguishable.

COMMON PROBLEMS	BENEFITS OF OUR WRITING METHOD
Reference and training manuals are often time consuming to read and hard to figure out.	The organization and keypoints of the information are always clearly visible to learning, permitting rapid learning and thorough comprehension.
Organization of written material is poor; sequencing is faulty.	Learners can grasp instantly each part of written communications; the learning flows easily in the correct sequence.
Training time is too long; too expensive.	Reduces training time and the cost of instructor assistance.

Continued on next page

ADVANTAGES OF THE INFORMATION MAPPING METHOD, Continued

Aids task analysis phase

Our method of writing provides a complete checklist for task analysis and the organization of training information in a format that frequently approximates final presentation.

Our writing method provides an explicit framework to deal with job and training decisions.

COMMON PROBLEMS	BENEFITS OF OUR WRITING METHOD
The early--and expensive--analytical phase of instructional materials development is difficult and often incomplete.	Task analysis is comprehensive and accurate.
Instructional texts may obscure rather than reveal important gaps, leading to re-analysis and costly revisions.	Permits "instant outlining" of subject matter--easy to check for missing content
Instructional decision making is faulty due to inadequate analysis.	You have more time to weigh important factors; your analysis is better; you gain flexibility through working with easily interchangeable units of information; and no important matters are overlooked--you have all the facts.

Continued on next page

ADVANTAGES OF THE INFORMATION MAPPING METHOD, Continued

Quick retrieval of information

Information is logically structured; main points are clearly labeled; the format is consistent throughout.

COMMON PROBLEMS	BENEFITS OF OUR WRITING METHOD
Difficult to look up information in training documents.	Scanning is easy. Retrieval and review are easy too; readers can study what they need to know--no more, no less.
Review is difficult.	Our method of writing eliminates errors due to "giving up" on long searches.
Main points are obscure--readers can't tell what is relevant and what isn't.	Relevant parts are readily identifiable to readers. They have confidence that the parts they skip are either not critical to them--or are easy to locate should they want to go back.
Training documents have too many separate parts--for training, review, reference, etc. Hard to handle and expensive to produce.	Learning and job aids are integrated in a single document with our method. After initial training is completed, exercises and driver pages can be removed, leaving a reference manual.

Continued on next page

ADVANTAGES OF THE INFORMATION MAPPING METHOD, Continued

Updating easy	Our writing method organizes subject matter into flexible modular units.

COMMON PROBLEMS	BENEFITS OF OUR WRITING METHOD
Much company information is overly complex, detailed and intricate.	Information broken into manageable chunks is easy to handle, easy to use.
Instructional materials are difficult to revise or update, rewriting is very costly.	Updating and revision are easy--just delete Blocks of information and plug in new ones. You save time and money on rewrites.

Readers prefer our writing materials

Attitudinal studies conducted to compare our method of writing with conventional text indicate that readers prefer our writing materials because of

- clarity of information
- "direct, friendly" style
- ease of scanning.

TASK ANALYSIS AND OUR METHOD OF WRITING

Overview	The writing methods used by IMI incorporate many of the principles associated with task analysis.
Definition	Task analysis is the description of jobs in terms of identifiable units of activities. It covers a range of analytical procedures for use in describing human work in terms of tasks.
Tasks: types and characteristics	Task analysis techniques are based on the fact that there are certain common characteristics of tasks and that there are different types of tasks. These task analysis techniques can be applied to the analysis of work at various levels of specificity.
Predicts the job activities in new systems	Task analysis, when used as a phase of development in the establishment of a new system, provides data for predicting the nature of the job activities that would be required to operate and maintain the projected system.
IMI's bias towards the task analytical approach	Most manuals have a bias towards the description of the process or structure of the operation. However, IMI's bias is toward a description of the task analytical approach to the process for the user; IMI's approach is to consider the user's role without neglecting any of the relevant process considerations.
Our method expresses the results of task analysis	The results of task analysis usually yield a series of reports, lists, and tables. The method of writing used by IMI expresses these results of task analysis in our format. Tasks and knowledge topics are classified into the appropriate type of Map. For example, • Tasks are contained in the procedure Maps of the manual • Knowledge Topics associated with tasks are classified into other Maps, organized in relation to the tasks they support. This easy fit of task analysis with our method of writing permits the writer to move easily from the analysis phase to the writing phase. In fact, key Blocks prepared in the analysis phase already begin to approximate the appearance of the final training materials.

SAVINGS ACHIEVED BY USING OUR WRITING METHOD

Introduction	Many of our clients have measured and reported performance improvements after adopting our methods. The figures shown here reflect the range of savings achieved by different clients compared to their previous situations.
Savings	Client evaluations and independent research studies have reported savings in the following areas: • Increases in user productivity of up to 50% resulting from better training, easier access to needed information, and reduced impact of employee turnover on output. • Up to 55% fewer errors resulting from increased comprehension, especially true with more complex tasks. • Up to 70% less supervision needed. When people can easily find and understand what they need to know they don't keep bugging their supervisors. Supervisors also spend less time monitoring, checking and correcting subordinates. • Training costs are reduced 20 to 40% because of faster comprehension and a reduction in the amount of instructor time that's required. • We find that once writers become proficient in our writing method they become up to 30% more productive because of the self-organizing nature of the method. They spend less time with organization and composition. It's like a filing system--you shouldn't have to create a new filing system every time you start a new project. In addition, our modular structure saves writers time in the editing and revising stages.

SUMMARY OF RECENT RESEARCH

Recent research	The following presents recent summaries of six recent evaluations of Information Mapping. These evaluations compare training materials and text in two modes: • the Information Mapping method, and • another method (either conventional paragraphs or programmed learing) The performance tasks in these evaluations are focused on either learning or retrieval. All found the Information Mapping method significantly superior to the other method.
Scope of applications	The papers discusses different applications using the methodology in academic, business and govenmental situations.
Summary	All our work is done in the "real world" of government and industry projects. Because we have made so many of our standards explicit, the material on which research is done is comparable. Our work to date provides a wide "jumping off" platform for future research.

SUMMARY OF RECENT RESEARCH

TYPE OF STUDY	VARIABLES	RESULTS	SUBJECTS	INVESTIGATOR AND DATE
Experi-mental	Information Mapping vs. Conventional Prose	With Information Mapping subjects learnded significantly more mathematics in less time.	High School Adult Learners	Romiszowski (1977)
Experi-mental	Information Mapping vs. Conventional Prose	Information Mapping • resulted in better test performance in knowledge gain <u>and</u> • was preferred for readability, understandability, and acceptability.	University Students	Stuart (1979)
Experi-mental	Information Mapping vs. Conventional Prose	With Information Mapping training time was reduced by 50% and subjects performed nearly twice as well on criterion tests.	Clerical Workers	Webber (1979)
Experi-mental	Information Mapping vs. Programmed Instruction	Information Mapping provided a clear advantage in retrieving information from textual material.	College Seniors and Graduate Students	Jonnassen (1979)
Experi-mental	Information Mapping vs. Conventional Prose	Subjects using instructional materials in Information Mapping achieved significantly higher levels of learning.	High School Students Ranging from Low to High Mental Ability	Soyster (1980)
Experi-mental	Information Mapping vs. Conventional Prose	Information Mapping produced • higher gain scores for facts • higher gain scores for learning concepts.	Undergraduate College Students	Stelnicki (1980)

Continued on next page

SUMMARY OF RECENT RESEARCH, Continued

Bibiography

Jonnassen, David H. Recall and Retrieval from Mapped and Programmed Text, Paper presented to the AECT convention, New Orleans, La., February 1979.

Romiszoewski, Alexander J. A Study of Individualized Systems for Mathematics Instruction at the Post-Secondary Levels. Unpublished Ph.D. Thesis. Loughborough University of Technology (U.K.), June 1977.

Soyster, Thomas G. A Comparison of the Effects of Programmed Instruction and the Information Mapping Method of Instructional Design on Learning and Retention of Students with Different Mental Abilities. Unpublished Ed.D Thesis, Temple University, 1980.

Stelnicki, Michael. The Effects of Information-Mapped and Standard Text Presentations With Fact and Concept Levels of Learning on Low General Ability Adult Learner Cognition. Unpublished Ed.D Thesis, Northern Illinois University, 1980.

Stuart, Teresa Habito. The Effectiveness of Information Mapping Compared With the Conventional Paragraph in Communicating Technical Information. Unpublished Master's Thesis, University of the Philippines at Los Banos, October 1979.

Webber, Naomi. Some Results of Using the Information Mapping® Writing Service Service Standards at Pacific Telephone Company, Paper presented at National Society for Performance and Instruction, Washington, D.C., April 12, 1979.

THE INFORMATION MAPPING® WRITING SERVICE

The problem	Good written communication is essential, but writing it is expensive and difficult, often misusing the talents of key personnel.
The solution: our writing service	We are specialists in information management, documentation and training. Our method of writing administrative and technical documents and manuals is the product of 15 years of research into how people read and digest information. No one else can offer this approach.
Types of documents	We have prepared documentation for the country's leading corporations and government agencies. Our products include • methods & procedure manuals • personnel manuals • computer system documentation • user manuals • training system manuals • computer assisted instruction packages, and • performance evaluation materials.
Some benefits of our service	Benefits of our service include: • cost savings from reduced time spent reading and digesting information • decreased time spent looking for the right material • fewer errors from miscommunication • increased productivity of information users

INFORMATION MAPPING® SEMINARS

Public seminars	IMI has been offering Information Mapping seminars to government and industry since 1972. These seminars are held monthly in major U.S. cities.
On-site seminars	On-site seminars provide major advantages for clients who have large numbers of people responsible for writing, maintaining and updating company policies and procedures.
Purpose of seminars	The seminars are designed to teach people how to write • procedures and methods • training materials • technical manuals, texts and reference manuals using our method of writing.
List of seminars	This is a list of some of the more recent Information Mapping seminars we have conducted for the Army. • training INSCOM headquarters personnel at Ft. Meade. INSCOM is implementing Information Mapping throughout headquarters. • conducted seminars at III Corps at Fort Hood, Texas (sample of regulations in Appendix C). The Information Mapping method has been used for regulations, reports and disposition papers distributed throughout the fort. • trained staff and faculty at the U.S. Army Chaplain School, Ft. Monmouth, New Jersey.

APPENDIX A

OVERVIEW OF SAMPLE TYPESET PAGES

Intoduction	The following 5 pages are a partial sampling from the Training Program Evaluation developed by Information Mapping and typeset. The purpose for including these sample pages is to illustrate how a typeset page can further improve the accessibility and readability of the text.

Question 4: Are Standards Listed in the Training Objective?

Question

Does the training objective specify the **standards** to which soldiers must perform?

Purpose of the question

There are certain standards each soldier must meet in order to correctly perform a task. These standards need to be listed in the lesson plan in order for the instructor to give a soldier a GO *or* NO GO for performing a task.

Standards of a task

The standards which a soldier must meet must be listed in terms of time *and/or* accuracy.

A standard must be observable **and** measurable.

Example of a standard

If a soldier must repair something, the standards will be

- how long it takes to repair, **and**
- how well it works when repaired.

Question 5: Are the Standards Clearly Spelled Out?

Question

Are the **standards** clearly spelled out so that the soldier, the instructor, the examiner, and a training evaluator can tell the difference between performance at or above standard from performance that is below standard?

Purpose of the question

Each task must have *clearly* written standards. This is necessary because the standards for a soldier's performance must be understood and applied in the same manner by everyone, especially the

- soldier
- instructor
- examiner, and
- training evaluator.

If the standards are unclear, then it is harder to determine the differences between a GO and a NO GO performance.

Unclear standards cause problems

When standards are written in an unclear manner, it increases the chance that those standards will be

- applied differently by each examiner, **and**
- misunderstood by soldiers, instructors, examiners and evaluators.

Question 7: Is the Required Information Taught Through a Lecture or Hand-Out?

Question

Does the lesson plan call for the dissemination of the required enabling knowledge in either a lecture or a hand-out?

Purpose of the question

In order to perform a task, a soldier must learn all the terms, concepts and other subject matter related to the task.

All required information should be found in the lesson plan.

What is the information?

Here is a list of the terms, concepts and other information that needs to be included in the lesson plan:

- the names or labels for things
- the explanation of the working relationship of parts
- the required readings on gauges and dials
- any rules and strategies
- the explanation of underlying concepts
- the introduction of any other related subject matter.

How is the information presented?

The information must be presented in a

- lecture or
- handout or
- lecture *and* hand-out.

Question 8: Is the Task Completely Demonstrated?

Question

Does the lesson plan call for a demonstration of the task (in its entirety)?

Purpose of the question

It is important that each task is completely demonstrated by a skilled instructor in order for it to be correctly learned.

The lesson plan must therefore provide an outline of how to exactly demonstrate the task.

How is a good demonstration conducted?

The outline should indicate that the task must be demonstrated

- by an instructor
- on actual equipment (or a realistic mock-up)
- in full view of the soldiers being trained, and
- with the soldiers allowed to stop the instructor to ask questions.

What about other demonstration methods?

Films, slides or other practical methods are usually less effective in the demonstration of tasks.

They should only be used when time *and* resources do not permit a live demonstration.

Question 15: Are the Items to be Tested Taken Directly from the Training Objective?

Question	Do the test items derive directly from the training objective?
Purpose of the question	In order to evaluate the training accurately, soldiers should be tested *only* on those tasks which are listed in the training objective.
When tasks should be tested	*All* tasks/subtasks listed in the training objective should be tested at some point in the training.
Important	Soldiers must *never* be tested on tasks/subtasks that are not • listed in the training objective or • part of the actual training.

Question 16: Are All Critical or Difficult Tasks or Subtasks Tested?

Question	Does the test require the soldier to perform all the steps specified in the training objective?
Purpose of the question	In order to make sure that all parts of the training are learned, each soldier should be tested on all tasks or subtasks identified in the training objective. These tasks or subtasks include • critical decisions • difficult actions, and • critical discriminations *Remember*: If a task or subtask is important enough to be singled out in the training objective, it is important enough to test.
What needs to be tested?	*Critical decisions and difficult actions* test a soldier's gained expertise in a training objective. *Critical discriminations* test whether a soldier knows what action • is/is not required or • is taken in a specified case.

Question 17: Are the Conditions the Same for Training and Testing?

Question	Are the conditions specified for the test the same as those specified for the training in the training objective?
Purpose of the question	In order to accurately test a soldier's performance, the conditions specified in the training objective need to be the same conditions used for both training *and* testing. New conditions should *not* be added for testing purposes if they were *not* listed in the training objective and the training.
Example	A training objective requires that a task be performed under the conditions of reduced visibility. The two conditions are fog *and* darkness. The training and testing conditions require the *same* conditions of fog and darkness.

Question 18: Are the Standards the Same for the Test?

Question	Are the standards specified for the test the same as those specified in the training objective?
Purpose of the question	In order to correctly test a soldier on a task, the test standards should be the same as the standards used in training. These standards must be listed in the training objective.
Example	A training objective requires that a task be completed in a given amount of time. The test for that task must also be completed in the same amount of time.
Where are test standards specified?	Test standards should be specified in at least one of two places: • the instructions to the examiner or • on the test score sheets.

Question 21: Are Scoring Instructions Specific Enough?

Question

Are scoring instructions specific enough (at the step/subtask level) to ensure that correct performance is observable and understandable to both the examiner and the soldier?

Purpose of the question

In order to score a test correctly, the examiner must be able to see and measure what the soldier is doing or, when that is not possible, see and measure what the soldier has done.

In either case, the examiner must know specifically what to look for in order to score the performance.

What to score

The lesson plan should show you two different ways to score a task.

IF...	THEN score the
how a task is performed is most important	action sequence being performed
the product is most important	final product only

Important: Instructions should be easy to read

Scoring instructions should also be written clearly and simply so the examiner *and* soldiers can read them.

Example

(Insert example of how to score when performance is most important.)

Example

(Insert example of how to score when product is most important)

APPENDIX B

OVERVIEW OF DELTA FORCE PAPER

Introduction	The following pages are from a report presented to Delta Force U.S. Army War College by Robert E. Horn, President, Information Mapping, Inc. The report was titled "Information and Decision Management Through Information Mapping."

INFORMATION AND DECISION MANAGEMENT THROUGH STRUCTURED WRITING—TABLE OF CONTENTS

Delta Force -- Concept Paper -- Abstract B-3

Information and Decision Management Through Structured Writing.. B-4

Before and After.. B-10

DELTA FORCE — CONCEPT PAPER -- ABSTRACT

Concept Paper Title	INFORMATION AND DECISION MANAGEMENT THROUGH STRUCTURED WRITING.

Concept

The Army, like all modern organizations, has a significant need to manage information in order to make the right amount available to relevant decision makers at the right time at the right level of detail.

New developments coming out of research in the psychology of written communication in the past fifteen years have reached the implementation stage.

One of these developments is called "structured writing".

It has applications in

- development of large knowledge bases
- management of decision processes in large scale systems
- routine writing and analysis in administrative and technical environments.

Documents written using the structured writing approach facilitate

- gathering and analysis of information
- structuring it in meaningful ways for decision makers
- organization of large files, and
- improvement in the integrity of decision making thought processes.

Author Robert E. Horn

INFORMATION AND DECISION MANAGEMENT THROUGH STRUCTURED WRITING

Problem: Rapid Changes in jobs...	Information has gotten more complex in every job and discipline. People switch jobs more often.
and people...	This increasing turnover requires more and speedier retraining, faster briefing, and instant retrieval.
and information...	Technology changes. People must learn to use the new.
and the amount of information...	90% of all scientists who ever lived are alive today. Many are producing significant new knowledge and all are producing papers. The information generating capabilities of the computer have surpassed all predictions.
Problem: How to Manage Information	The major job now facing executives is that of managing the information resources at their disposal.
Possible Solution	To handle these problems of complexity and change in information, a new discipline called structured writing has been emerging from the laboratory into the implementation phase.

Goals	The goals of the structured writing methods are
	• provide quick, reliable access -- to enable readers to find out what they are looking for easily and precisely
	• facilitate multiple use -- to enable learners to use their own learning styles to read and remember the material with maximum efficiency and effectiveness
	• ease the writers job -- to enable writers to
	  • analyze and write a document quickly and effectively
	  • interlink complete components
	  • update documents efficiently
	  • index reliably and quickly
	• provide framework for design of computer-based storage and retrieval -- to enable programmers to structure large knowledge bases and decision management systems based on text rather than on numbers.

Copyright Permission	

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INFORMATION AND DECISION MANAGEMENT THROUGH STRUCTURED WRITING, Continued

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Formal Definitions

Structured when applied to writing refers to different properties of the text that permit the structure of the subject matter and the document to be perceived by the reader.

Structured writing is writing that is relatively high in structure.

Structured writing using the standards of the Information Mapping*service (which pioneered the field) refers to writing that is highly structured with

- a specific set of principles and criteria to guide writing and graphic choices
- labelled blocks (each with its own standards) to "chunk" information which replace the paragraph as the major smallest meaningful unit
- groups of blocks that form into documents and divided into Maps (each with its own standards)
- specific formatting for
  - texts, procedures, reference books, and manuals
  - reports, memos, and other administrative documents
  - computer-displayed text
- specific graphic components (each with its own standards)
- specific guidelines on style, sentence length, type and word choice (for different readers and user groups).

Informal Definition

Structured writing is a methodology developed to help people solve the problem of communication when complexity causes them to bog down and tear their hair out.

It uses highly graphic chunks of information, carefully thought out structuring of information and formats that highlight the structure.

This permits people to scan quickly to what they want and skip what is not relevant.

For writers, structured writing is easy to learn and easy to use.

Continued on next page

Information and Decision Management Through Structured Writing, Continued

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Results

Over the past fifteen years of research, structured writing methodology has resulted in the following:

- Better retrieval -- It is faster for human beings to analyze large files of documents because they can manage the access routes better.
- Faster scanning -- Structured writing provides more efficient reading and briefing time because managers can skip what they already know and find their way through the large piles in their in boxes that the photocopying machine has plagued us with.
- More creative problem solving -- Structured writing permits you to move between the levels of complexity and detail and still keep your eye on the big picture.

For the analyst writer, structured writing produces:

- Better analysis -- Structured writing methods often reveal inconsistencies, ommissions, and provide built in formats for thinking through problems
- Clear writing -- Structured writing is simple (but not over-simplified), direct, and efficient. It facilitates the movement of documents through various review levels up the chain of command easily and swiftly.
- Easier updating -- Structured writing produces more economical and efficient updating with clearly defined chunks of information.

Recent Implementation Evidence

Any type of Document -- Several hundred applications in business, industry and government have shown that structured writing can handle the most routine documents in virtually any subject matter, administrative, scientific or technical.

Decision Management Systems -- Recent work suggests that it may have significant impact upon the design of large scale computer based decision management systems.

These are systems where there is a requirement for large scale file management and multi-person use.

It appears that structured writing permits managers at various levels to avoid being swamped by detail and see the large picture (because the structure of the document in the subject matter is always apparent in each document) and still have detail accessible to them when they want to dig into a particular point.

Continued on next page

INFORMATION AND DECISION MANAGEMENT THROUGH STRUCTURED WRITING, Continued

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Recent Implementation Evidence, continued

Knowledge Bases -- The methodology also appears to be helpful in permitting larger groups of people to contribute to a single on-going and growing and changing knowledge base in an environment such as

- large scale weapons development systems
- large scale administrative and computer systems
- large organizational planning and multi-person decision making processes such as long range strategic planning
- large communication systems with rapidly changing complex components.

Less well prepared readers and writers -- Recent evidence suggests that people who are less prepared academically can also use structured writing more effectively as readers and as writers.

Recent Cost Benefits Analysis

Recently several major industries have done cost-benefits assessments of the use of structured writing in large systems environments.

Case One: Order Entry. In one analysis, a large utility found that it would save approximately $850,000 a year in operating an order entry system.

The application is to the basic procedural documents that totaled close to 2,000 pages that were used by 300 order takers and 130 checkers and their supervisors.

A group of eight writers were spending full time keeping this document up to date.

The company chose structured writing initially as the only vehicle for permitting standardization and rapid updating in the reformulation of the document when the new system was installed.

However, later cost-benefits analysis showed that, in addition to serving these important purposes, the system would result in

- reduction in user questions
- reduction in user errors
- reduction in training time
- reduction in writing time
- increased productivity of users.

resulting in major cost savings.

Continued on next page

INFORMATION AND DECISION MANAGEMENT THROUGH STRUCTURED WRITING, Continued

Cost Benefits, continued

Case Two: Training. In another study done for a company with over 100,000 employees, the consulting group estimated that the company would save approximately 14 million dollars in training costs alone when structured writing was fully implemented within the company.

This company is now engaged in a major effort to train all people whose job is primarily writing or analysis in structured writing methods.

Recent Evaluation Research

In Appendix B, we present summaries of six recent evaluations of structured writing.

These evaluations compare training materials and text in two modes:

- structured writing, and
- another method (either conventional paragraphs or programmed learning).

The performance tasks in these evaluations focus on either learning or retrieval.

All six found structured writing significantly superior to the other methods.

Four of these were doctoral dissertations done in three different countries, the United Kingdom, the Philippines, and the United States.

Recent Training Evaluation

Recent training evaluation of structured writing courses shows the following:

- For a person whose job is full time writing, it takes about five days to learn the basics.
- It takes on the average another three to six months, (depending on previous writing experience) for a person to get up to full speed in using all of the structured writing methods.
- It takes a manager about two and a half days to learn the basics of using structured writing for short memos and medium length reports.

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INFORMATION AND DECISION MANAGEMENT THROUGH STRUCTURED WRITING, Continued

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Possible Army Applications

Up to now structured writing has not been used to any significant degree (to our knowledge) in the military services.

We suggest that the following are good initial applications:

- Decision management in large scale new systems (weapons, administrative, or technical systems)
- The management of large knowledge bases on military subjects
- The preparation of plans in logistics, intelligence, and operations.
- The management of large knowledge bases in intelligence work that need to be updated rapidly, scanned quickly and require rapid integrity checking.
- The Army administrative and procedure system.

Appendix B: Compare Befores and Afters

The purpose of Appendix B of this paper is to compare typical pages from business documents with the same information rewritten and formatted using structured writing standards.

We include typical pages from the following kinds of documents

- procedure manuals
- training manuals
- management memos and reports
- personnel manuals
- user documentation for computer systems
- system documentation.

Note this as you compare Versions in the Appendix

You will note that in the "befores," it is hard to scan for information.

Main points are buried, the information is often poorly organized and the structure is confusing.

In the versions using structured writing, you can find what you're looking for at a glance.

Analytic labels highlight the structure of information, aiding scanning and quick retrieval.

Ready-made formats make writing efficient, reducing errors and ommissions.

Typical Document

TO: All Employees
FROM: Oliver Castle, President
SUBJECT: Reorganization of the Company

As you well know, our company has had considerable difficulty this year with the collapse of the barunium market, with inflation hitting 7% and going up, with the labor difficulties we've had at several plants, and with the development of our new products, especially in the home products system. This situation has forced the management to assess our entire company and its operations with a view to finding a better way to organize it for improved profits and long-term efficiency.

Some of our departments have been growing and shrinking without much rhyme or reason, and before this occasion we had not made the effort to take a really hard look at what we were doing. Instead, we were patching things up here and there with the aim of eliminating duplication when we could and pulling together groups that belong together functionally.

Now we are announcing a major reorganization to take effect on January 19. We will announce the details on January 12, such as when the desks will be moved and when new managers will hold meetings with various employees to whom the information is pertinent. We will also, at that time, distribute a complete schedule setting forth who will be working for whom. In the meantime, we are announcing the following changes so the managers in charge of the affected divisions and departments can prepare for the reorganization.

Charles Jones will assume duties as director of the new Office Products Division, leaving his present post as manager of typewriter and office equipment supplies. Janice Moreland will move from Vice President for Research to Vice President for Operations. Jack Spotter will be the new head of the Research Department, moving from his position as Assistant to the Director for Research. Maxwell Richardson will become Assistant Vice President for Operations, leaving his post as Assistant to the President. Marilyn Belt will become director of the new Home Products Division, which used to have only project status. These changes in department managerial positions will take place on January 5. Current Assistant Directors will remain in their positions at that time unless otherwise notified.

Then, on Janury 12, changes at the level of assistant directors will go into effect. Jed Franklin and Marsha Zettonelli, who will become Assistant Director of Office Products and Assistant Director of Home Products, respectively, from their current positions as Assistant Director of Finance and Director of Budgeting. The staffs of these departments will be informed by special memorandum from their managers about whether they will be moving with their current managers or staying in their current departments. In most cases there will be no change, as we are trying to keep as many departments intact, with experienced staff, as possible.

Same Document — The Structured Writing Version

TO: All Employees
FROM: Oliver Castle, President
SUBJECT: REORGANIZATION OF THE COMPANY

Background

As you well know, our company has had considerable difficulty this year with

- the collapse of the barunium market
- inflation hitting 7% and going up
- labor difficulties at several plants
- development of new products, especially in the home products system.

This situation has forced the management to assess our entire company and its operations with a view to finding a better way to organize it for improved profits and long-term efficiency.

	NAME	WILL MOVE FROM ...	TO ...
Shifts in Corporate Officers and Division Chiefs	Charles Jones	Manager, Typewriter & Office Equipment Supplies	Dir., Office Products Div.
	Janice Moreland	V.P. Research	V.P., Operations
	Jack Spotter	Asst. Dir. Research	Dir., Research
	Maxwell Richardson	Asst. to the President	Asst. V.P. Operations
	Marilyn Belt	Asst. to the Plant Mgr.	Dir. Home Prod. Div.
Assistant Director Moves	Jed Franklin	Asst. Dir. Finance	Asst. Dir., Office Products
	Marsha Zettonelli	Dir. of Budgeting	Asst. Dir., Home Prod.

Other Staff

The staffs of these departments will be informed by special memo from their managers whether they will be moving with their current managers or staying in their current departments. In most cases there will be no change, as we are trying to keep as many departments intact as possible.

Effective Dates

Changes in Corporate Officers and Div. Chiefs	January 5
Announcement of details of reorganization. Assistant Directors move to new jobs	January 12
Departmental and Division changes in organization (including some move of offices and desks.	January 12

Typical Document

TO: All Supervisors
FROM: Director of Human Resources
SUBJECT: TRANSFERS

There are more and more requests for transfers as the company expands and the key work force adopts a more flexible lifestyle. The company supervisor is a key person in facilitating such transfers and in determining whether they would be in the best interest of the company and the employees. This memorandum covers company policy which has been in effect for the past year and continues to be our policy. It outlines each supervisor's responsibilities when an employee under their supervision requests a transfer.

First, it is in the company's interest to retain employees who are performing satisfactorily, therefore, we will try to help employees to move to an area or job which they find more desirable. This is what you should do. When an employee comes to talk about a transfer or to request one, you should provide them with Form 742, Application for Transfer and tell them to fill it out as soon as possible.

If the employee is applying for a new job and not just a new location and if there are any parts of the new job that you as the supervisor consider may disqualify the employee, then you should discuss with the employee those areas immediately. Remember, it is the company policy that if an employee wishes to be transferred, the company will make every effort to find a job acceptable to the employee. So you should not discourage any request for transfer, even if it would disturb the completion of projects or goals in your department.

At the bottom of the form, you should fill out the supervisor's comment. Be brief and to the point. When you have finished that, you should make a Xerox copy of the employee's latest Performance Evaluation and attach it to the form.

If the employee's current performance rating is unsatisfactory, then your signature and your immediate supervisor's signature on Part C of the form are required. If the current performance rating is outstanding, then attach a copy of any letters of commendation. If the current performance rating is satisfactory, you do not have to attach anything.

Send a copy of the blue copy of the form to the company Placement Bureau and a pink copy to your Departmental File. The yellow copy should be given to the employee.

Same Document — The Structured Writing Version

How to Handle Transfer Requests

Introduction This outlines each supervisor's responsibilities when an employee under your supervision requests a transfer.

List of Steps

<table>
<tr><th>STEP</th><th>ACTION</th></tr>
<tr><td>1</td><td>When employees request transfers, provide them with form 742, Application for Transfer.</td></tr>
<tr><td>2</td><td>Discuss with the employee any areas in the new job that you consider may disqualify the employee. Remember, it is our policy that if an employee wishes to be transferred, the company will make every effort to find a job acceptable to the employee. So you may in <u>no</u> way discourage a request for transfer.</td></tr>
<tr><td>3</td><td>At the bottom of the form, fill out the supervisor's comments.</td></tr>
<tr><td>4</td><td>Attach a copy of the latest Performance Evaluation.</td></tr>
<tr><td>5</td><td><table>
<tr><th>IF the current performance rating is</th><th>THEN</th></tr>
<tr><td>Unsatisfactory</td><td>Your signature and your immediate supervisor's signature on part C of the form are required.</td></tr>
<tr><td>Outstanding</td><td>Attach a copy of the letter of commendation.</td></tr>
</table></td></tr>
<tr><td>6</td><td><table>
<tr><th>Send this copy of the form</th><th>TO</th></tr>
<tr><td>Blue</td><td>Placement Bureau</td></tr>
<tr><td>Pink</td><td>Departmental File</td></tr>
<tr><td>Yellow</td><td>Employee</td></tr>
</table></td></tr>
</table>

Typical Personnel Manual

GRIEVANCE PROCEDURE

Company Policy

Any problem that an employee has that occurs while he or she is on the job must first be discussed with his or her immediate supervisor. If the difficulty is not solved to his or her satisfaction within 5 working days of the incident, then a grievance may be filed by the employee. A grievance may be filed by the employee if he or she feels that his or her immediate supervisor failed to act on the problem or refused to discuss the problem within a reasonable length of time.

The Grievance Procedure

The First Step

Within 5 working days of the job-related problem, the employee must complete a grievance form and send a copy to the Section Head and a copy to his or her supervisor. The Section Head will send a copy to the Personnel Office and will meet with the employee and any representative the employee chooses. The Section Head will try to resolve the problem at this level. The employee will receive the decision of the meeting in writing promptly. The Section Head has up to 5 working days to inform the employee of his decision.

The Second Step

If the employee is not satisfied with the decision made at the Section Head level, he or she may present the grievance in writing to the Director of Personnel. The employee has 10 working days to present the grievance. The Director must arrange a meeting promptly after receiving the grievance notification. By promptly, we mean within 5 working days of receiving the grievance. The Director will arrange a meeting with the employee and any representative he or she chooses and the Section Head. The purpose of this meeting will be to try and resolve the job-related difficulty at this level. The employee will receive notification of the outcome of this meeting within 5 days of the meeting from the Director of Personnel.

Same Document — The Structured Writing Version

GRIEVANCE PROCESS

Policy

Any employee who has a problem arising from a work-related incident has the right to present the problem as a grievance.

Rule

The employee must first meet with his immediate supervisor to resolve the problem. If the employee is not satisfied with the results of this meeting or if the supervisor fails or refuses to discuss the problem, then the employee may file a grievance.

Definition

Immediate supervisor is the individual who directs the daily work of the employee.

Process

STEP	WHO	ACTION
1	Employee & Supervisor	Meet to discuss work-related problem.
IF PROBLEM IS NOT SOLVED, PROCEED TO STEP 2.		
2	Employee	Completes the Grievance Form & sends one copy to the Section Head & one copy to the immediate supervisor within 5 days of the first meeting.
3	Section Head	A. forwards copy of the Grievance Form to the Personnel Office. B. meets with the employee and any section representative the employee chooses. C. delivers the decision of the meeting within 5 days to the employee.
IF PROBLEM IS NOT SOLVED, PROCEED TO STEP 4.		
4	Employee	Presents grievance to Director of Personnel within 10 working days of receipt of decision from Section Head.
5	Director of Personnel	A. meets with employee, section representative & Section Head within 5 days of grievance presentation. B. delivers decision of meeting to the employee within 5 days.

Typical Personnel Manual

EXEMPT AND NONEXEMPT VACATION POLICY

Company Policy

Our company believes that employees benefit by a complete period of rest and relaxation during the year. The company therefore has established a policy that employees should take their vacation at any time during the year after they have completed a full year of work following their anniversary date of hire. The company policy does not allow that an employee carry over any vacation days or receive any pay for days not taken.

Exempt and nonexempt employees have a slightly different vacation schedule.

Exempt employees are allowed:

2 weeks vacation for the first two years (only after completing a full year's wo~k)

3 weeks vacation for years 3 through 9

4 weeks vacation for years 10 through 14

5 weeks vacation for years 15 through 19, and

6 weeks vacation for any year after 20.

Nonexempt employees are allowed:

1 week vacation for the first two years (only after completing a full year's work)

2 weeks vacation for years 3 through 9

3 weeks vacation for years 10 through 14

4 weeks vacation for years 15 through 19, and

5 weeks vacation for any year after 20.

If a company holiday occurs during a vacation of a nonexempt employee, he may take another day of vacation when he wants to. An exempt employee does not have this option.

Same Document — The Structured Writing Version

VACATION POLICY AND SCHEDULE FOR EXEMPT AND NONEXEMPT EMPLOYEES

Company Policy

Employees may take their vacation at any time during the year following their anniversary date of hire.

Example

An employee hired on June 1, 1979 would be eligible for vacation after June 1, 1980.

Rule One

No vacation days will be accumulated from one anniversary to the next.

Rule Two

No payment will be made for vacation days not taken.

How Much?

YEARS	EXEMPT EMPLOYEES	NONEXEMPT EMPLOYEES
1-2	2 weeks	1 week
2-9	3 weeks	2 weeks
10-14	4 weeks	3 weeks
15-19	5 weeks	4 weeks
20 +	6 weeks	5 weeks

Holidays During Vacation

If a company paid holiday occurs during a vacation period

- nonexempt employees are eligible for an additional vacation day, <u>but</u>
- exempt employees forfeit the holiday

Example

A nonexempt employee schedules his vacation during the first two weeks of July. The Fourth of July is a company paid holiday. The employee receives an additional day of vacation.

Typical Personnel Manual

MEAL ALLOWANCES

The following shows when meal allowances are paid and when meal periods should be scheduled.

When the normal shift is extended less than 2 hours at the beginning or at any time at the beginning, then an additional 40-minute unpaid meal period is not required, or a change in the original meal period can be made at the employee's request, and an occasional meal allowance is not paid. When the normal shift is extended less than two hours at the end, and when the second shift is 5 hours or less, then an additional 40-minute unpaid meal period must not be scheduled and an occasional meal allowance is not paid.

When the normal shift is extended any time at the end which makes the second shift longer than 6 hours, or longer than 5 hours and the employee requests an additional meal period, then an additional 40-minute unpaid meal period must be scheduled and an occasional $7.00 meal allowance is paid.

When the normal shift is extended two hours or more at the end, then an additional 40-minute unpaid meal period depends upon whether the second shift is less than 5 hours (in which case no additional meal period is scheduled), is more than 5 hours and less than 6 hours (in which case an additional meal is scheduled at the employee's request), or more than 6 hours (in which case an additional meal must be scheduled), and an occasional $7.00 meal allowance is paid.

When the shift is extended 6 hours or more at the end, then an additional 40-minute unpaid meal period must be scheduled and an occasional meal allowance of $7.00 plus an additional $7.00 is paid.

Same Document — The Structured Writing Version

WHEN TO SCHEDULE MEAL PERIODS AND PAY MEAL ALLOWANCES

Decision Table

IF the normal shift is extended	And IF the second shift is	THEN an additional 40-minute meal period	AND the meal allowance is
Less than 2 hours after the start of the shift	less than 5 hours	is NOT required but the original meal period may be rescheduled at the employee's request	NOT paid
Less than 2 hours before the end of the shift	less than 5 hours	is NOT required	NOT paid
Any time during the normal shift	between 5 and 6 hours and the employee requests an additional meal period	MUST be scheduled	PAID $7.00
Less than 2 hours before the end of the shift	more than 6 hours	MUST be scheduled	PAID $7.00 plus an additional $7.00

Typical Personnel Manual

COMPANY MOVING POLICY

Objective and Eligibility

To help list those items attendant to the hiring of new employees or the transferring of current employees that are part of the company policy. The policy applies to employees who are being transferred at company request and new hires.

Moving Expenses

The company pays normal moving expenses for moving to a new location. The company tries to cover all the costs of moving household articles from the employee's former principal place of residence to the new location. Items that are unusually large or cumbersome to move, require very special handling are not covered under the company policy. Articles that are not easily replaced or cannot be replaced at a reasonable cost should not be moved.

The company will make all the necessary contacts for the move. These contacts will cover the shipping and packing of the household items. Payment will be made by the company directly to the movers.

The company pays all the insurance costs involved in the move. The company also helps with finding a new house by contacting local real estate offices as well as paying for the broker's commission if the employee had to sell a house as part of the move. The company helps the employee in settling by paying for the utilities to be hooked up and for the appliances to be installed.

If the new location is not ready, the company will provide temporary housing until the new location is ready for up to 30 days. The company will also pay to keep the household goods in storage until the new location is ready for up to 30 days. The company is also more than willing to help with such problems as new driver's licenses and car registrations.

It is the hope of the company that a new employee will not have many difficulties in making a move. The policy is designed to be as fair as possible to both the company and the employee.

Same Document — The Structured Writing Version

COMPANY PAID MOVING EXPENSES

Policy	The company pays all necessary and reasonable expenses that are part of moving newly hired or transferring employees.
Eligible Employees	The company pays the moving expenses of • employees transferring at company request • new hires
Paid Moving Expenses	The company pays for moving all normal household articles from the former household of the employee including • all packing and shipping of household items • broker's commission for sale of employee's house • hook-up of utilities and appliances in the new household • storage costs for up to 30 days until new housing is ready • insurance costs of the move
Other Company Moving Benefits	The company will also help with • locating new housing through local real estate brokers • changing driver's licenses and car registrations • providing temporary company housing for up to 30 days until new housing is ready
What the Company Will Not Pay For	The company is not responsible for articles that • cannot be replaced at reasonable cost • require extra handling • are unusually large
Example	A transferring employee has a collection of 17 antique grandfather clocks. The company cannot assume the cost or responsibility for shipping the clocks because • they require extra handling and • cannot be replaced at a reasonable cost
Who Makes the Arrangements	The company makes all the necessary arrangements with the commercial movers. All arrangements will be made with the convenience of the employee as first concern. The company pays the moving company directly.

Typical Procedure Manual

<u>Accounting Code 504 Covering Travel, Entertainment and Promotion Charges</u>

Our company must obviously send employees out of town for business meetings, conventions and the like. The expenses incurred on these sort of outings must be charged out to Code 504 for accounting and income tax purposes.

Promotion in the heading of the policy has to do with advancing the company, not with the promotion of an employee to a higher rank in the company. Costs concerning employees are covered under separate accounting code 602.

Travel charges always present a bit of a problem because of confusion of the end result. Travel and lodging in this case would cover air fare, train, taxi charges for employees who are traveling on company business for the aforementioned purposes. Travel that has to do with company transfers or for interviewing purposes is not covered under Code 504. Training is not considered a business meeting unless, obviously, it is a training session for a client, in which case it would still not be a 504 charge but a direct project charge.

Branch managers are responsible for reviewing all 504 expense sheets to make sure that the 504 expenses are in line with budget projections and that all 504's appear as 504's.

Some of the most common 504's are

- Local travel by clerical staff to post office, bank etc.
- Trade Fairs
- Conventions
- Christmas Cards
- Give-Away Items
- Flowers
- Any Company Advertising
- Mileage on an Employee's Car
- Office Staff Monthly Breakfast

In order to facilitate cash flow, it is important to make sure that the expenses are listed in the monthly log when they are to be paid not (stressed) when they actually incurred.

***Yellow Pages advertising is not to be included in 504. Yellow Pages is a corporate charge. Please see the Corporate Charge Section under Code C202.**

Same Document — The Structured Writing Version

TRAVEL, ENTERTAINMENT AND PROMOTION CHARGES

Company Policy

Use Account Code 504 for all

- travel
- entertainment
- promotion

charges reported on the Budget Estimates and Expense Reporting Sheets.

Rationale

These charges must be kept separate for income tax purposes.

Definitions

TERM	DEFINITION	EXAMPLES
Travel	All expenses for company-related travel, including local and out-of-town	• Air fare • Train fare • Taxi <u>or</u> • Employee's car mileage
Enter-tainment	Customer entertainment expenses	• Lunch with a client • Office staff monthly breakfast
Promotion	Advertising and Public Relations	• Trade fairs • Conventions • Open House • Give-away items • Christmas Cards • Ad agency fees

Exceptions

<u>Travel</u> for

- interviewing prospective employees
- relocation
- company training

is not covered under code 504.

Yellow Pages advertising is a corporate charge and is coded under C202.

Responsibility for Review

Branch Managers are responsible for reviewing all 504 charges for

- comparison of actual 504 expenses versus budget projections
- completeness of 504 charges.

Rule

Expenses are listed in the monthly log when they are paid, <u>not</u> when they occurred.

APPENDIX C

OVERVIEW OF ARMY REGULATIONS DONE BY INFORMATION MAPPING

Introduction

The following pages are examples of Army Regulations done under contract for Colonel Roy Ray, Information Mapping Task Force, Fort Hood, Texas (817-685-2201/7201).

They have been included to show related materials that work best when done in our method. They also further substantiate our conclusions about using our method for a variety of Army literature.

C[illegible]NE

GENERAL INFORMATION

OVERVIEW

Purpose

The Active Component Training Regulation (FH Reg 350-1) supplements Army Regulation (AR) 350-1, Army Training, and FORSCOM Regulation 350-1, Active Component Training. FH Reg 350-1 provides additional guidance for implementing active Army training policies and requirements currently outlined in these regulations.

1-1

Applicability

This training regulation applies to all units assigned or attached to III Corps and Fort Hood.

III Corps Reserve Component CAPSTONE units should use this regulation as a guide for their training programs.

1-3

Training objective

The III Corps and Fort Hood training objective is to prepare individuals and units to do their jobs in combat.

Soldiers and units develop and sustain needed skills and knowledge if both individual and collective training are

- performance-oriented
- realistic, and
- challenging.

1-2

Meeting training objectives

To ensure that training is done efficiently and economically, leaders must understand

- the training management system, and
- current fiscal policies.

Leaders must balance individual and collective training tasks when allocating resources and developing training programs.

1-2

Continued on next page

USE OF TROOP LABOR FOR ENGINEER PROJECTS

Applicability	This regulation applies to all units developing engineer projects requiring troop labor. 2-11a
Planning and coordination requirements	Units developing engineer projects that require troop labor should review references to ensure compliance with established policies. Troop Construction Branch, Operations Division, (DFE), 685-6716, should be contacted early in the planning phase for indentification and resolution of potential problem areas. Units developing projects in areas outside of their cantonment or close-in training area should also contact the G3/DPT Range Officer 685-5519. 2-11c
Examples	Examples of engineer projects that can be done by troop labor are: • construction of permanent roads, airfields, buildings, or range facilities, and • major changes or any alterations to existing structures. 2-11b

CHAPTER

TRAINING IN UNITS

OVERVIEW

3-1

Introduction — This chapter addresses both collective and individual training. Units must integrate both types into their training programs.

3-1

Background — Soldiers respond best when challenged physically and mentally.

In order to maintain high performance levels, units must make sure that soldiers are challenged to use the skills they have already acquired.

In teaching new skills, units should select clear, realistic goals for all trainees. It is important to set standards and conditions appropriate to the skill level of the unit or individual.

3-2

Individual development — The following institutions can be used for developing skills of individual soldiers:

- Basic Combat Training (BCT)
- Advanced Individual Training (AIT)
- Non-Commissioned Officers Education Systems (NCOES)
- enlisted courses, and
- officer courses.

3-2

Training manuals — The following manuals can be used to assist in training.

MANUAL	WHEN TO USE
Soldier's Manual	Use as a part of collective training on a continuing basis. Note: The Soldier's Manual is the cornerstone of individual training. 3-1b
Fort Hood's Project Manager's Directory	Use to help train low density MOS's. 3-1b(1)
Aircrew Training Manuals (ATM)	Use in aviation units to guide Aircrew training. 3-1b(2)

Continued on next page

TRAINING FOR COMMAND GROUP AND STAFFS

3-6

Avoid disrupting troop training	Training of commanders and staff is an important part of unit training programs. Units should avoid disrupting troop training by using • map exercises • Tactical Exercises Without Troops (TEWT), and • Command Post Exercises.

3-6a

Use battle simulations	Battle simulations are important to exercising command and staff procedure against a realistic OPFOR. Units should use the manual and computer assisted simulations as much as possible. Note: Simulations, from platoon to division level, are available from the Simulation Branch (ACofS, G3/DPT Exercise Division) at 685-4015/5417.

3-6b

FIELD EXERCISES

3-7

General policy

Field exercises at bottom and higher levels emphasize combined arms training. The exercises incorporate CS and CSS elements as much as possible.

3-7a

Frequency and nature of training

Use guidelines in this table for determining frequency and nature of training.

DIVISION	FREQUENCY	NATURE OF TRAINING
Battalion	Several times each year	Task force training
Brigade	At least once a year	Multi-battalion, including appropriate support elements
Division	At least once a year	Whole division support base, including 1 or more combat brigades

3-7b

Create realistic demands

FTXs emphasize continuous day and night operations.

Scenarios expose both commanders and troops to stress and fatigue, and place realistic demands on combat, CS and CSS units.

3-7c

COMBINED ARMS LIVE FIRE EXERCISES

3-9

Scheduling for live fire exercises	Units should conduct live fire exercises • through the company level annually • at the battalion level at least every 18 months, resources permitting.
Constraint	Units must not use live fire exercises for the primary purpose of staging a demonstration.

RECOMMENDED MINIMUM FREQUENCY FOR EVALUATING TRAINING STATUS

3-10

Maintain balance	In general, the Army spends too much time inspecting and <u>not</u> enough time training or firing. Units should try to reverse this ratio.
Importance of commander's role	The best evaluation tool is the personal commitment and involvement of every commander in the chain of command. The chain of command can evaluate their unit while they train, without stopping to have a formal evaluation period. The results of these evaluations can be used to make changes to planned training.
Use formal evaluation tools	Where appropriate, the following tests can be used to provide feedback on the strengths and weaknesses of soldiers and units: • Skill Qualification Test (SQT) <u>Note</u>: The SQT is the primary diagnostic tool for evaluating <u>individual training</u>. • Army Training and Evaluation Program (ARTEP) <u>Note</u>: The ARTEP is the primary diagnostic tool for evaluating <u>unit training</u>. • EDRE, and/or • FTXs.

NIGHT OPERATIONS

3-11

Night training	Because night training is important, a large proportion of unit maneuver during Company and Battalion field training is done at night.
When to use day training	Daytime training is used for • preparation • reconnaissance, and • assembly area activities, including rest.
Recommendation	Units should attach the normal CSS slice to combat and combat support units conducting night training.

INDIVIDUAL TRAINING EVALUATION PROGRAM (ITEP)

3-17

Evaluation tools

The Individual Training Evaluation Program (ITEP) uses three tools to evaluate individual skill proficiency.

EVALUATION TOOL	WHAT IT MEASURES	TYPE OF TEST OR ASSESSMENT	SOURCE
Common Task Test	Proficiency on common tasks	Hands-on	Centrally developed 3-17a(1)
Commander's Evaluations	Proficiency on MOS or common tasks determined critical to unit's mission	• Hands-on for equipment based skills • Written for administrative skills or soldier knowledge requirements	Locally developed 3-17a(2)
Skill Qualification Test (SQT)	Proficiency on a representative sample of MOS-specific Soldier's Manual	Written	Centrally developed 3-17a(3)

3-17a

Record in Job Books

The Job Book is the best way of recording individual training.

The presence of Job Books may be checked on inspections, but their contents must <u>not</u> be inspected.

Exceptions to this policy are

- DD Form 1435 (Cryptographic Maintenance Training and Experience Record), required by AR 640-15
- DD Form 3479 (Air Traffic Control Training and Proficiency Record), required by AR 95-1, and
- aircrew training records, required by AR 95-1.

3-17b

OFF-POST TRAINING—UNIT TRAINING AT OTHER POSTS

3-20

Description

Unit training at other posts may be at active component installations or at installations controlled by reserve components.

3-20d(1)

Obtain permission

Units must obtain permission to train from the post's controlling headquarters as well as from the approval authority.

Costs for off-post training

Units conducting the training must bear the costs of training at other posts.

Resources for training may be provided by the post where training occurs. These resources may include

- food
- fuel, and/or
- munitions.

3-20d(2)

To establish unit training at other posts

Units must follow these procedures when establishing unit training at other posts.

STEP	ACTION
1	Develop a concept of training showing the benefits to be gained from training at another post.
2	Submit a request for approval of the concept as early as possible. Do <u>not</u> submit a request for approval later than 90 days before the requested training date.
3	Once the concept is approved, coordinate arrangements with the appropriate agencies at the other post. <u>Note</u>: The approving authority will send approved letter requests, range request forms and/or other formal documentation to the post scheduling agency to confirm its approval.

3-20d(3)

Continued on next page

APPENDIX A: OFF-POST TRAINING SITE REQUEST FORM

Introduction Use this form to request an off-post training site.

Form

OFF-POST TRAINING SITE REQUEST	
Address form	The request should be addressed to: Commander, III Corps and Fort Hood, ATTN: AFZF-DPT-TT, Fort Hood, Texas 76544.
References	Cite the following references for your request: • FH Regulation 350-1, Active Component Training • ARTEP (cite appropriate ARTEP for tasks to be trained) • other references as appropriate.
Request information	Include the following when requesting permission to train at an off-post location: • requesting unit • geographic location (post name or training site, number and coordinates, as appropriate) • inclusive dates of training (indicate advance party if appropriate) • alternate training location.
Unit training goals	Include the unit training goals for off-post training. This should include a brief scenario of training planned and demonstrate the relationship to unit ARTEP tasks and/or missions.
Personnel/ equipment deployment	List the personnel and equipment to be deployed. Include the numbers of personnel, numbers and types of equipment to be deployed.
Justification	Justification includes a statement of why training cannot be done at Fort Hood and a statement that all costs will be born by the requesting unit.
Point of contact	The point of contact includes the name of the requesting unit and major subordinate command.
Signature	Sign the request form.

END

DATE

ILME